

# MARINE SAFETY MANUAL

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## CHAPTER 4: PHYSICAL REQUIREMENTS FOR MARINERS

### A. Physical Examinations.

Merchant Marine Personnel Physical Examination Report, Form CG-719K, is submitted with the application for a license or MMD when a physical examination is required. Any questions relating to physical requirements may be directed to the National Maritime Center. Guidance to assist medical personnel in conducting these examinations is found in NVIC 2-98.

### B. Qualified Medical Personnel.

*Physician* will be used in this chapter to mean a licensed medical doctor (including doctors of osteopathy (D.O.)), a licensed physician assistant, or a licensed nurse practitioner. The above medical personnel must be licensed by a state in the U.S., a U.S. possession, or a U.S. territory. Foreign medical licenses are not accepted. A chiropractor is not acceptable as a physician; see 46 CFR 10.205(d).

### C. Completing The Merchant Marine Personnel Physical Examination Report (Form CG-719K).

One of the major concerns of an evaluator is having the CG-719K completed properly. The CG-719K must be completed and signed by a physician. The license number, the state issuing the license, the address and telephone number of the physician must be included on the CG-719K. A random number of CG-719K's should be verified with the physician to check the information on the form. If any of the notations on the form are unreadable, unknown, or omitted, a quick call to the signer may clear up any misunderstanding and verify the applicant's condition. The evaluator is responsible to ensure that the applicant provides satisfactory evidence to show that he or she meets the physical requirements of the regulations. It is the applicant's responsibility to provide the necessary medical information to evaluate the application. If the information from the physician is incomplete or unacceptable, return the CG-719K to the applicant to obtain the required information.

### D. Physical Standards.

The conditions discussed in this chapter are considered to be potentially disqualifying for the purpose of obtaining a license or MMD. They are not intended to be absolute or all-encompassing. One applicant could be unqualified due to a condition not listed here, while another applicant could have a listed condition and be qualified for a waiver. Waivers may be considered where extenuating circumstances are such as to warrant special consideration.

### E. Unlicensed Seaman Physical Standards.

46 CFR Part 12, Certification of Seamen, refers to 46 CFR 10.205(d) when setting standards for unlicensed seamen. The following is a list of ratings and the standards they must meet:

1. Able seamen must meet the same physical standards as a licensed master, mate, or pilot.
2. Qualified member of the engine department (QMED) must meet same physical standards as a licensed engineer.
3. Tankermen must meet the same physical standards as a licensed engineer.

F. Waiver Statements.

There is no regulation that requires the seaman to notify the REC when a physical waiver condition worsens during the license period. To prevent possible injury to the seaman and prevent a vessel from becoming unseaworthy the following statement will be placed on the license/MMD. "Any deterioration of a waived medical condition shall be immediately reported to the nearest REC." Under certain conditions OCMIs are authorized to grant waivers for the physical standards. This authorization does not prevent the OCMi from asking advice or further evaluation from NMC. Listed below are the standards for local waivers.

1. Vision.

There are two areas of concern with vision. One is the ability of the applicant to see at a distance (visual acuity) and the other is the ability to distinguish colors (color sense).

a. Visual Acuity Waiver.

Corrected visual acuity must always be at least 20/40 for deck officers and at least 20/50 for engineering officers (46 CFR 10.202(f)). All RECs are authorized to grant waivers to applicants who have an uncorrected vision no worse than 20/800 under the following conditions:

- (1) The applicant may not have a degenerative condition that would speed the deterioration of their eyesight. All applicants with diabetes must submit documentation from their doctor that the diabetes is not affecting the applicant's eyesight.
- (2) The license must contain a vision waiver notation that requires the mariner to wear the corrective lenses (contacts or glasses). A spare set of glasses (not contact lenses) must also be carried aboard the vessel for all individuals with a vision waiver.
- (3) The applicant must have 100 degrees, horizontal field of vision.
- (4) Every applicant with uncorrected vision of 20/400 to 20/800 must wear corrective lenses (contacts or glasses), and carry a spare set of glasses on their person. If glasses are worn, they must have an attached restraining device to keep them securely in place.

b. Color Vision.

The required tests for color vision are specified in the regulations and on the reverse of the Form CG-719K for deck officers. A deck officer must pass one of these prescribed tests. An exception may be made for restricted Inland routes. They may have their licenses endorsed "Vision Waiver: Restricted to daylight operation only." In granting a waiver the area (route) of operation must also be considered. If it is unreasonable to expect that the applicant would be able to comply with this restriction, additional area restrictions may be placed on the license. An example would be a license limited to a specific geographic area, e.g., "Montauk Point, N.Y. to Martha's Vineyard." The expectation is that the licensee would be able to comply with the daylight only operation.

c. Monocular Vision.

Monocular vision is the ability to see with one eye only. A person may have both eyes functioning but due to a problem, such as cross fixation (cross-eyed), they have limited or no depth perception. These cases should be referred to NMC. For raise of grade or renewal applications, monocular vision is addressed in 46 CFR 10.207(e)(3) and 10.209(d)(3), respectively.

2. Hearing.

Hearing acuity presents two concerns for the evaluator. One is the unaided hearing response to certain frequencies and the other is speech discrimination ability at 55 decibels (dB).

a. Decibels (dB).

This is a measure of the power or loudness of sound. The higher the number, the louder the sound. Someone who can hear a 20 dB sound has better hearing than someone who can only hear a 60 dB sound. Normal conversation is at 55 dB, hence the speech discrimination test at 55 dB.

b. Standards.

Hearing shall be evaluated in accordance with NVIC 2-98.

c. Hearing Aid Waiver.

(1) Deck Department.

Deck department personnel who cannot meet the above requirements may use hearing aids. Mariners with hearing aids who meet the auditory requirements of NVIC 2-98, may be granted a waiver by the OCMI. The license or MMD must show that a waiver was issued.

(2) Engineering Department.

Hearing aids may not be used to meet the auditory requirements for Engineering licenses or MMDs. Concerns in the engine room include negative effects of hearing aids around loud noises. However, in some cases, impaired hearing is no worse in the engine room than an individual with hearing protection on. Outside the machinery space, such as the control room, an individual would likely need the hearing aid to use a telephone or to respond to audible console alarms. Engineers (licensed and/or documented) must be able to hear telephone bells/buzzers, general alarm bells, and CO<sup>2</sup> sirens without aid in the engine room. A letter attesting to this ability shall be provided by the applicant from the vessels chief engineer or master. A waiver notation, if granted, shall be added to the license or MMD. Questionable cases should be referred to NMC for further review.

d. Other Hearing Waiver.

Other conditions that do not meet the situations described above may be considered for a waiver when recommended by the OCMI. Such cases will be evaluated by NMC.

3. Mind Altering Drugs (Psychotropic Drugs).

Drugs used to treat psychiatric disorders are called mind altering or psychotropic drugs. Applicants requiring these drugs are no longer automatically considered ineligible for a license or MMD. Conditions treated by psychotropic drugs are separated into two distinct categories; psychosis and/or neurosis

- a. Waivers should be considered on a case by case basis for individuals with neurotic disorders (anxiety or depression). Supporting data shall include a strong recommendation from the attending physician confirming no adverse side affects from the medication over a one year period.
- b. Waivers are not normally approved for individuals with psychotic disorders (manic depression, schizophrenia). Although a person may have demonstrated control of the condition, it is not unusual that patients feel well and decide to reduce or stop medication. They often regress without realizing it. Given the limited resources available to assist a vessel's crew (as opposed to what is available ashore), an unacceptable risk to the vessel and crew may develop. All such cases shall be forwarded to NMC for evaluation. If a determination is then made that the mariner is competent to have a waiver granted, the license/MMD shall be endorsed with the appropriate waiver statement. "Physical Waiver: This waiver is granted on the condition that there is no further degradation of your condition. Any degradation shall be immediately reported to the nearest Coast Guard Regional Examination Center."

G. National Maritime Center Waivers.

Medical conditions that are beyond the scope of the REC to evaluate shall be referred to NMC. See paragraph 4.H for a discussion of those conditions.

1. As all waiver requests are from the OCMI and not the applicant, the applicant need not provide a letter requesting a waiver.
2. The request for a waiver should be sent directly to NMC. These requests are no longer required to be reviewed by the District offices.
3. Send only copies of the medical file and the current application package.  
[REMEMBER, COPIES ONLY].

H. Medical Conditions Needing Further Review.

The following is a discussion of the medical conditions requiring further review by NMC. Although not all inclusive the medical conditions discussed cover those most frequently seen.

1. Diabetes.

A physical waiver is required for all applicants seeking an original, renewal, or upgrade of a license or MMD who have insulin-dependent diabetes or poorly controlled non-insulin dependent diabetes (see figures 4-1 and 4-2). In order to be considered for a waiver, applicants must provide thorough amplifying written information from their physician including statements covering;

- a. A brief history of the applicant's diabetes, including when the diagnosis was made;
- b. The extent of applicant's diabetes education by topics (for minimum requirements see Figure 4-1);
- c. Description of any hospitalization in the past 12 months;
- d. A description of the applicant's control of the diabetes;
- e. If insulin-dependent, the applicant's ability to monitor his/her blood glucose and adjust his/her insulin dosage;
- f. A description of any other chronic medical conditions;
- g. A list of the applicant's medications, dosage, and required dosage frequency;
- h. Length of time the applicant has been on the current dosage;
- i. Copies of the applicant's medical record entries for the past 18 months; and
- j. A copy of the laboratory report of glycosolated hemoglobin (HgbA1c), within the past 30 days. NOTE: Waivers will not be granted when test results are 10.0 and over as this indicates poor control.

2. Cardiac.

Cardiac infirmities are often beyond the scope of the RECs to handle. The list below indicates those conditions requiring further information, and most likely, a waiver. Cardiac medication is a good indicator that a significant coronary condition exists. When submitting the case for a waiver review a recent (less than 12 months old) stress test will be required.

- a. History Of Myocardial Infarction(s).  
Any such history must be described in the attending physician's report including "class" (class III or IV) of myocardial infarction(s).
- b. Surgery.  
Any cardiac surgeries, including cardiac pacemaker implant, bypass, etc., require further evaluation and thorough description(s) in order to facilitate thorough analysis by Headquarters medical staff.
- c. Heart Irregularity.  
Irregularity sufficient to compromise cardiac function.
- d. Hypertension.  
Uncontrolled hypertension or hypertension controlled by medication requiring close monitoring. Applications indicating uncontrolled hypertension or control by reserpine, guanethidine, guanadrel, methylopa, clonidine, or guanabenz must be evaluated by NMC. If the applicant's hypertension is controlled by diuretics, beta-

adrenagic blocking agents, labetalol, hydralazine, minoxidil, prazosin, captopril, or calcium slow channel blocking agents, no further evaluation is required unless additional complications are noted by the examining physician.

(1) Original Licenses.

Blood pressure higher than 150/90 regardless of treatment with medication.

(2) Renewal Or Raise Of Grade.

Blood pressure higher than 160/100 if under age 50 or 175/100 if 50 or over, on medication.

3. Physical Handicaps.

Conditions such as loss of limb or restricted motions of limb require a practical demonstration of ability. These demonstrations determine if an applicant can safely perform all duties entrusted to him/her by virtue of holding a license. The OCMI shall recommend the extent of the test to NMC for approval prior to the demonstration. If possible, an underway practical examination should be performed. The license may be approved at the local level with the OCMI imposing any necessary limitations.

a. Operator of Uninspected Towing or Passenger Vessels (OUTV, OUPV) and Master Or Mate Of Less Than 200 Gross Tons.

A practical demonstration shall include the following elements:

- (1) Handling of mooring lines.
- (2) Climbing and descending the vessel's ladder.
- (3) Reaching, handling, grasping, and lifting lifesaving and fire fighting equipment required by the vessel's COI or applicable regulations.
- (4) Donning and properly wearing a personal flotation device (PFDs); Helping passengers don PFDs; Casting ring buoys.
- (5) Properly operating fire fighting equipment.
- (6) Recovering a person who has fallen overboard.
- (7) Rendering first-aid to a person who may be unconscious or otherwise incapacitated.
- (8) Using shipboard tools to repair a mechanical breakdown.
- (9) Properly use navigation/communication equipment if applicable.

b. Deck And Engineer Officer Licenses.

A practical demonstration shall include the following elements.

- (1) Climbing and descending the ship's ladder.
- (2) Climbing and descending a Jacob's ladder.
- (3) Opening and closing watertight doors.
- (4) Exiting vessel via emergency routes.



- (5) Rowing a lifeboat.
- (6) Wearing an emergency breathing apparatus.
- (7) Reaching, handling, grasping, and lifting lifesaving and fire fighting equipment required by the vessel's COI.
- (8) Donning and properly wearing a personal flotation device (PFD) and casting ring buoys.
- (9) Deck Officers must handle mooring lines and operate winch controls.
- (10) Engineers must operate valves and related machinery control equipment.
- (11) Properly use navigation/communication equipment if applicable.

#### **FIGURE 4-1: COMPREHENSIVE DIABETES EDUCATION PROGRAM**

To include but not limited to:

1. The disease and its complications.
2. Diet management and weight control.
3. Types of insulin, characteristics and uses.
4. Storage, handling and administration of insulin.
5. Monitoring blood glucose.
6. Self-adjustment of insulin dosage in response to trends in blood glucose monitoring.
7. Effects of illness, injury, stress, heavy manual labor, exercise and other factors on diabetic control, insulin dose and diet.
8. The applicant's recognition when there is a loss of diabetic control.

## FIGURE 4-2: RECOMMENDED CHECKLIST FOR DIABETES

**(REC USE ONLY.) This list is for the REC to use to ensure that sufficient information is being given for the waiver. Do not send this list to the doctor.**

1. Physician's statement that:

- ☐ applicant has completed a comprehensive diabetes education program.
- ☐ no hospitalizations within the last 12 months.
- ☐ applicant's diabetic control is stable.
  - ☐ has total insulin dose per day varied less than ten units up or down (e.g., total range less than 20)?
- ☐ applicant is able to maintain diabetic control by monitoring blood glucose and appropriately adjusting insulin dosage.
- ☐ copies of medical record entries for last 18 months.
  - ☐ are there at least three entries?
  - ☐ are there less than six entries?
  - ☐ the record supports the statement that the disease is stable. Any doubts refer to G-NMC-4C.
  - ☐ no evidence of other significant conditions or diabetes-related illnesses.  
[NOTE: Many illnesses may not be apparently related to diabetes; any doubts refer to G-NMC-4C.]
- ☐ Test: HgbA1C within one month of waiver request.
  - ☐ within normal limits?

2. Applicant's statement that:

- ☐ no hospitalizations within the last 12 months.
- ☐ he/she is capable of maintaining diabetic control by:
  - ☐ monitoring blood glucose.
  - ☐ adjusting insulin dose and other relevant factors.

